REV-01
BMLT/10/15

2025/12

SET A

BACHELOR OF MEDICAL LABORATORY TECHNOLOGY
THIRD SEMESTER
PATHOLOGY III
BMLT – 305 [REPEAT]

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective **Marks: 20**

Time: 30 min. *1×20=20*

Choose the correct answer from the following:

1. Which of the following is a basic dye?
   a. Eosin
   b. Methylene blue
   c. Picric acid
   d. Hematoxylin

2. In cryomicrotomy, tissue is hardened in _____ before sectioning.
   a. Liquid nitrogen
   b. Liquid petroleum
   c. Formalin
   d. xylene

3. MGG stain is an abbreviation for:
   a. Methylene-Giemsa-Green
   b. Mayer's Green-Giemsa
   c. Modified Giemsa Gradient
   d. May-Grunwald-Giemsa

4. Which epithelium is specialized for stretching?
   a. Stratified squamous
   b. Simple columnar
   c. Ciliated epithelium
   d. Transitional epithelium

5. Acid dyes are generally:
   a. Negatively charged
   b. Positively charged
   c. Amphoteric
   d. Neutral

6. The functional unit of the nervous system is:
   a. Neuron
   b. Neuroglia
   c. Axon
   d. Dendrite

7. Registering and labelling of specimens is important to:
   a. Prevent specimen mix-up
   b. Enhance staining
   c. Dehydrate tissue
   d. Embed tissue

8. Which chemical is commonly used for decalcification?
   a. Hydrochloric acid
   b. Nitric acid
   c. EDTA
   d. All of these

9. Mounting of tissue sections is done to:
   a. Observe under a microscope
   b. Embed tissue
   c. Dehydrate tissue
   d. Fix tissue

10. Precautions during embedding include:
    a. Avoid air bubbles
    b. Ensure correct tissue orientation
    c. Both a and b
    d. Use high temperatures always

11. Hematoxylin stains:
    a. Cytoplasm
    b. Collagen
    c. Lipids
    d. Nucleus

12. Which of the following is not a cell organelle?
    a. Mitochondria
    b. Collagen fiber
    c. Golgi apparatus
    d. Ribosome

13. A group of similar cells performing a common function is called:
    a. Organ
    b. Tissue
    c. Organism
    d. System

14. Proper labelling of slides is important to:
    a. Decalcify tissue
    b. Harden tissue
    c. Improve staining
    d. Avoid misidentification

15. What is used to remove water from the tissue during tissue processing?
    a. Formalin
    b. xylene
    c. Ethyl alcohol
    d. All of these

16. Grossing of specimens refers to:
    a. Microscopic examination
    b. Macroscopic examination and dissection of tissue
    c. Dehydration
    d. Embedding

17. _____ is the routine fixative used in histopathology laboratory.
    a. 10% Formalin
    b. Osmium tetroxide
    c. 40% Formaldehyde
    d. None of these

18. Which epithelium lines the trachea?
    a. Stratified squamous
    b. Simple cuboidal
    c. Pseudostratified ciliated columnar
    d. Simple squamous

19. Which epithelium lines the urinary bladder?
    a. Transitional epithelium
    b. Stratified squamous
    c. Simple cuboidal
    d. Pseudostratified columnar

20. Which preparation method can be used in histopathology?
    a. Smears
    b. Mounts
    c. Sections
    d. All of these

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Descriptive

Time : 2 hrs. 30 min. **Marks : 50**

[Answer question no.1 & any four (4) from the rest]

1. What are fixatives? State the aim and function of fixatives. Classify them with examples. **5+5=10**

2. Define microtome. Describe the different types of microtomes. **2+8=10**

3. Write the steps of tissue processing. **10**

4. Write the principle and procedure of H&E staining. **10**

5. Explain the different types of agents used in dehydration. **10**

6. Explain the structure and function of a typical cell, including its organelles.
   Discuss the cell cycle and compare mitosis and meiosis. **2+4+4 =10**

7. Explain the process of clearing. Mention four clearing agents. Explain the different methods of decalcification. **2+4+4 =10**

8. Elaborate on the processes of infiltration and embedding in histopathology. Explain the types of embedding media. **2+2+6 =10**

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